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Application No.: 10/779,438

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Case No.: 56873US002

REMARKS

Claims 1-47 are pending.

Examination and reconsideration of the application is requested.

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**§ 103 Rejections**

Claims 1-47 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,344,270 (McCullough et al.) in view of Maschinenkunde (English Translation).

The rejection of claims 1-47 under 35 USC § 103(a) as being unpatentable over '270 (McCullough et al.) in view of Maschinenkunde (English Translation) should be withdrawn.

It is said in the Office Action that '270 (McCullough et al.) teaches a composite wire or cable that includes fiber reinforced metal matrix composites comprising a core containing at least one tow comprising a plurality of substantially continuous, longitudinally positioned reinforcing fibers of ceramic or carbon which is encapsulated within a metal matrix (specific reference is made to col. 3, l. 31-45). It is also said in the Office Action that '270 (McCullough et al.) further teaches that the wire or cable may have a metal covering the metal matrix composite core (specific reference is made to col. 9, l. 21-65 and figures 4-5). Further, it is said in the Office Action that '270 (McCullough et al.) does not exemplify an embodiment wherein the metal matrix composite core comprises a metal cladding.

Mashinenkunde is said in the Office Action to form a cladding sheathing coating by extrusion on a composite wire or cable core containing a plurality of fibers providing seamless outer coatings having good dimensional accuracy, concentricity and good surface quality (specific reference is made to the first paragraph).

It is alleged in the Office Action that it would have been obvious to one of ordinary skill in the art to have modified the composite wire or cable of '270 (McCullough et al.) by following the teaching of Mashinenkunde of cladding the composite wire with the sheathing coating formed by extrusion, in order to have produced a wire having seamless outer coatings having good dimensional accuracy, concentricity and good surface quality. It is further said in the Office Action that it is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and a proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one of ordinary skill in the art the modifications called for by the claims (specific reference is made to In re Van Beckham, 169 USPQ 47 (CCPA 1971), In re Bozek, 163 USPQ

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545 (CCPA 1969); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Henley*, 112 USPQ 56 (CCPA 1956); *In re Sneed*, 218 USPQ 385 (Fed. Cir. 1983)).

Further, it is said in the Office Action that in response to the issue of whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved (specific reference is made to *In re Wood*, 202 USPQ 171, 174). It is said that in the instant case, both '270 (McCullough et al.) and *Mashinenkunde* are generally drawn to forming wire or cables that include a core containing a plurality of fibers having a metal covering the composite core.

It is also said in the Office Action that '270 (McCullough et al.) teaches that the wire or cable has a roundness value of at least 0.95, a roundness uniformity value of not greater than 1.5%, and a diameter uniformity value of not greater than 0.5% over a length of at least 100 meters (col. 1, l. 57 to col. 2, l. 6). '270 (McCullough et al.) is further said to exemplify embodiments wherein the roundness uniformity value is as low as 0.94% and the diameter uniformity value is 0.21% (specific reference is made to Table 1, runs 12 and 6, respectively).

The Office Action goes on to say that although the prior art does not exemplify embodiments having the claimed properties, it teaches the claimed properties as being maximum or minimum values with no upper or lower limit boundaries being specified. As such, it is alleged, it would have been obvious to one of ordinary skill in the art to have formed the metal-clad metal matrix composite wire having a roundness uniformity value lower than the 1.5% and a diameter uniformity value lower than the 0.5% including having values within the ranges claimed by Applicant. Furthermore, '270 (McCullough et al.) is said to exemplify embodiments having values that are so close that prima facie one skilled in the art would have expected them to have the same properties (specific reference is made to *Titanium Metals Corporation of America V. Banner*, 227 USPQ 773).

Further, in regard to claim 25, '270 (McCullough et al.) is said to teach what is set forth above but does not exemplify an embodiment wherein the roundness value is at least 0.98. However, it is said in the Office Action, as was set forth above, since '270 (McCullough et al.)

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only teaches the minimum value for the roundness value of being at least 0.95, higher values including that claimed by Applicant would have been obvious.

Applicants in independent claim 1, claim a metal-cladded metal matrix composite wire comprising:

- a metal matrix composite core having an exterior surface, the metal matrix composite core comprising:
  - at least one tow, wherein the tow comprises a plurality of continuous fibers that are oriented longitudinally with respect to each other, the fibers comprising at least one of ceramic or carbon;
  - a metal matrix, wherein each tow is positioned within the metal matrix;
  - and
- a metal cladding covering the exterior surface of the metal matrix composite core, wherein the metal cladding has a melting point not greater than 1100°C, wherein the metal-cladded metal matrix composite wire, exhibits a roundness value of at least 0.95, a roundness uniformity value of not greater than 0.9%, and a diameter uniformity value of not greater than 0.2% over a length of least 100 meters.

Further, Applicants in independent claim 25, claim a metal-cladded aluminum matrix composite wire comprising:

- an aluminum matrix composite wire having an exterior surface, the aluminum matrix composite wire comprising:
  - at least one tow, wherein the tow comprises a plurality of continuous fibers that are oriented longitudinally with respect to each other, the fibers comprising at least one of ceramic or carbon;
  - an aluminum matrix, wherein each tow is positioned within the aluminum matrix; and
- a metal cladding covering the exterior surface of the aluminum matrix composite wire, wherein the metal cladding has a melting point not greater than 1100°C,

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wherein the metal-cladded aluminum matrix composite wire, exhibits a roundness value of at least 0.98, a roundness uniformity value of not greater than 0.5%, and a diameter uniformity value of not greater than 0.2% over a length of least 100 meters.

The Office Action acknowledges that '270 (McCullough et al.) does not exemplify an embodiment wherein a metal matrix composite core comprises a metal cladding. Hence, even assuming arguendo the other features of the independent claims were taught or suggested by that '270 (McCullough et al.), '270 (McCullough et al.) alone fails to teach the inventions claimed in the independent claims. Further, it is understood that in view of the withdrawal of the previous rejections based on '270 (McCullough et al.), the Examiner agrees that '270 (McCullough et al.) does not properly suggest, and hence, does not render obvious, the inventions claimed in the independent claims.

Turning to Mashinenkunde, while not agreeing with the reasoning given for Mashinenkunde being analogous art, or that there is proper motivation to modify '270 (McCullough et al.) with Mashinenkunde, even assuming arguendo it is analogous art, and '270 (McCullough et al.) and Mashinenkunde were combined, it is unclear how the result is Applicants' claimed invention. For example, it is alleged that Mashinenkunde teaches forming a cladding sheathing coating by extrusion on a composite wire or cable core containing at plurality of fibers and provides seamless outer coatings having good dimensional accuracy, concentricity and good surface quality. Further, it is alleged that it would have been obvious to one of ordinary skill in the art to modify the composite wire or cable of '270 (McCullough et al.) by following the teaching of Mashinenkunde of cladding the composite wire with the sheathing coating formed by, extrusion in order to have produced a wire having seamless outer coatings

Applicants respectfully disagree, for example, that Mashinenkunde teaches forming a cladding sheathing coating on a composite wire or cable core containing a plurality of fibers. More specifically, for example, Mashinenkunde does not provide a "cladding". That is, the sheathing of Mashinenkunde is not "cladded" to anything, let alone wire or cables within the "sheathing". Hence, even if '270 (McCullough et al.) and Mashinenkunde were combined the result would not be Applicants' claimed invention.

Claims 2-24 depend directly or indirectly from claim 1. Claim 1 is patentable, for

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example, for at least the reasons given above (i.e., Applicants reserve the right to provide additional arguments, including disagreements with statements made in the Office Actions with respect to the prior art). Therefore, claims 2-24 should also be patentable.

Claims 26-47 depend directly or indirectly from claim 25. Claim 25 is patentable, for example, for at least the reasons given above (i.e., Applicants reserve the right to provide additional arguments, including disagreements with statements made in the Office Actions with respect to the prior art). Therefore, claims 26-47 should also be patentable.

In summary, the rejection of claims 1-47 under 35 USC § 103(a) as being unpatentable over '270 (McCullough et al.) in view of Maschinenkunde (English Translation) should be withdrawn.

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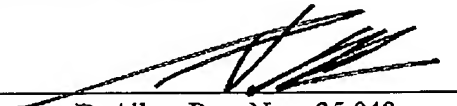
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In view of the above, it is submitted that the application is in condition for allowance.  
Reconsideration of the application is requested.

Allowance of claims 1-47 at an early date is solicited.

Respectfully submitted,

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Date

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